Chesterfield County
Department of Building Inspection
(804) 748-1057
www.chesterfield.gov/bi

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INSPECTIONS - RESIDENTIAL

After the plan review has been approved, one of the two stamped sets of plans (the "Approved Field Set") will be returned to the permit holder along with the Building Permit:

1. The Building Permit "shall be posted on the construction site for public inspection until the work is completed…to be readable from the public way."
2. It is the responsibility of the permit holder to be sure the stamped "Approved Field Set" is available at all times during the construction.

REQUESTING AN INSPECTION

Periodically throughout the construction process, the permit holder must request the required inspections. There are two ways to request these inspections:

1. Call (804) 751-4444, the IVR (Interactive Voice Response) system: an automated system whereby you can request an inspection,
2. Call (804) 751-4990, to speak to a customer service representative, and request your inspection.

It is the goal of the Inspection Division to complete the requested inspection by the end of the next working day. Therefore it is imperative that the permit holder is prepared and the required work completed before the inspector arrives. The "Approved Field Set" must be on site for the inspection.

CHECKING ON THE STATUS OF AN INSPECTION

To check on the results or status of an inspection you can go to the Chesterfield County, Building Inspection web page and link to the *Permit Status and Inspection Results*. By typing in your permit number and a pin number authorized by the Building Inspection Department, you can access your information 24-7.

WARRANTY

By State law, the person performing the work is responsible for code compliance. The inspectors verify code requirements, but they are not responsible for code violations (i.e. if an item is missed by the County inspector, it is still the responsibility of the doing the work to make the necessary repairs).

After the Certificate of Occupancy is issued, the code provides for enforcement of its provisions for a limited time after completion of work under a permit. If a code violation is discovered during this time, the County can take action that may require the responsible party to correct the violation. If you believe a building code violation exists in a structure you own or rent, you may request an investigation by an inspector by calling the Citizens Assistance Program. If the inspector determines that a violation exists, and the time limit for enforcing the code has not expired, we will take action to enforce the code. If the time limit for enforcement has expired, we will document the violation, but we cannot take action to enforce the code.

Experience has taught us that in most instances where new homeowners and their contractor disagree about an item needing correction, the item is cosmetic in nature, which means that it usually isn't a building code issue. We can not address issues outside of code requirements. If, as a new homeowner, you have issues that you believe are building code violations or are unsure, we will gladly investigate the issues and make a determination.

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LIST OF RESIDENTIAL INSPECTIONS (NOT ALL WILL APPLY TO ALL PROJECTS)	
Footing[1]	• After the trench is dug and installation of reinforcement • Prior to placement of the concrete
Projection	• After the first course of block has been laid or after the foundation is completed • Prior to backfilling
Foundation	• After backfilling crawl space • Prior to placement of foundation sill plates
Poured Wall	• After installation of reinforcement • Prior to placement of concrete
Floor Slab	• After installation of vapor barrier and perimeter insulation (if required) • Prior to placement of concrete
Monolithic Pour	• After the trench is dug, installation of reinforcement, vapor barrier and perimeter insulation (if required) • Prior to placement of concrete
Drainage / Waterproofing	• Prior to backfilling foundation
Veneer	• After installation of exterior sheathing, flashing, windows and doors • Prior to installation of exterior wall covering
Framing[2]	• After approval of all sub-trade rough-ins • Prior to concealment (hanging drywall)
Fireplace Masonry	• After smoke chamber has been constructed • Prior to completion of the chimney above smoke chamber
Insulation[2]	• After framing inspection • Prior to concealment
Final	• After all sub-trade final inspections and other required departmental inspections have been approved
Final Pool	• After all work has been completed and electrical final approval
Barrier	• After the pool has been completed

1. Inspection can be performed by Building Inspector or the County will accept a sealed report from an approved registered design professional,
2. Framing and Insulation inspections can be made at the same time for additions.

FOOTING INSPECTION

Based on the analysis of the soil report, the size and depth of the footing will be provided either by Virginia Registered Design Professional or by use of Chesterfield County's Minimum Standard Footing.

NEW SINGLE-FAMILY DWELLINGS

The Virginia Uniform Statewide Building code (VUSBC) requires that all footing excavations be inspected prior to the placement of the concrete to ensure that they are to the depth and size required and the rebar placement is correct as stipulated in the soil report. Likewise, the concrete placement must also be inspected to ensure that the concrete is the correct strength and quality as determined by a "slump test"; a concrete placement report must be submitted after the concrete has been placed. Blank copies of the combined Footing Inspection and Concrete Placement Report are available from the Department of Building Inspections.

Typically the contractor hires a third party inspector (a Virginia Registered Design Professional to perform both inspections at the same time. The County will inspect the footing excavation and steel placement if requested, but this is not the typical situation. Likewise, if the County is requested to do the concrete placement inspection, the contractor/homeowner will pay an additional fee to the County, who in turn will sub-contract the work out to a Virginia Registered Design Professional.

ADDITIONS, DETACHED STRUCTURES AND DECK ADDITIONS:

The County will inspect the footing excavation and steel placement (if required). An inspection of the actual placement of concrete is NOT required.

All other footing situations (additions, detached garages and deck) - do not require an inspection of the concrete during placement.

PROJECTION INSPECTION

This inspection is commonly made after the foundation is completed but can be made after the first course of block is laid on the footing. The exterior side of the footing trench is not to be backfilled. All step boards (bulkheads) and forming materials must be removed from the footing.

The footing trench should be clean enough to verify that the foundation is properly bonded to the footing. A minimum 2" projection from the outside of the footing to the face of the foundation wall must be maintained, except around a

masonry chimney where a minimum 6” projection must be maintained. The width of the projection must not exceed the depth of the footing (typically 8”).

FOUNDATION INSPECTION

This inspection is performed after the foundation wall is complete, and the crawl space has been backfilled. The sill plate should not be in place.

1. Anchor bolts
   A. An anchor bolt is required within 12” of each end of any foundation plate section, within 12” of each foundation wall corner and additionally at least every 6’ around the full perimeter of the foundation wall.
   B. The bolts must be a minimum of ½-inch in diameter and must extend a minimum of 7” into solid mortar in the foundation wall.
   C. The bolts must project above the wall enough to receive a washer and nut on the sill plate without having to mortise the plate.
   D. If using anchor straps instead of bolts, the straps shall be long enough to have the same depth as bolts and project high enough to receive two nails per side of the sill plate. Straps shall be spaced in accordance with the manufacturer’s installation instructions to achieve strength equivalent to anchor bolts, usually 12” from each end of a plate section and 42” on center.
   E. All wood sills that rest on concrete or masonry exterior walls and are less than 8” from exposed earth must be pressure treated.

2. Foundation wall
   A. The grade in the crawl space must be as high as, or higher than the finished exterior grade. If not, an approved drainage system will be required either on the inside or the outside of the foundation wall.
   B. The crawl space grade must be smooth and free of debris and vegetation.
   C. The distance from the crawl space grade to the bottom of wood girders must not be less than 12” unless the wood girders are pressure treated. The distance from the crawl space grade to the bottom of wood floor joists and/or sub-flooring must not be less than 18” unless the wood floor joists and/or sub-flooring are pressure treated.
   D. All basements, whether finished or not, require waterproofing and a drainage system.

3. Foundation vents
   A minimum of one foundation vent is required within 3 feet of each corner, and additionally as shown on the approved plans. A 6-mill crawl space vapor retarder is always required.

4. Access to the crawl space

   An access opening of 16-inches by 24-inches is required for every crawl space. A larger opening is required to accommodate the largest piece of equipment located in the crawl space. The opening must be covered with a door.

5. Piers

   The top of all piers must be capped by a solid cap block or filled solidly with mortar.

POURED WALL INSPECTION

This is an inspection of wall forms to confirm that they are erected according to the engineer's design. The procedures are the same for each inspection although each design may be different depending on the size of the wall and the detail of horizontal and vertical reinforcing rods.

BEFORE WALL IS POURED

1. The base of the wall is checked to make sure reinforcement is properly set and that the dowels from the footing are inside the forms.
2. All reinforcement bars must be in place and secured to prevent their movement. A projection inspection may be performed at the same time.

AFTER WALL IS POURED

1. After the walls are poured and the forms have been taken down, a visual check is made to verify the wall's integrity and to verify that anchor bolts are set correctly.

FLOOR SLAB INSPECTION

This inspection is to be performed after the vapor barrier and permanent insulation have been installed - but before the concrete is poured.

PREP WORK PRIOR TO CONCRETE POUR

1. The fill depth shall be at least 4" deep, but shall not exceed 24" for clean sand or gravel and 8" for earth. If the fill exceeds these limits, an engineer's design is required.
2. The fill shall be compacted to assure uniform support
3. The fill material must be free of vegetation and foreign material.
4. A 6-mil vapor retarder must be placed on top of the fill, except for garages, sheds, driveways, sidewalks, patios or other areas not likely to be heated later.

MONOLITHIC POUR INSPECTION

Usually a monolithic pour (sometimes called a "turned down slab") is used for detached garages and sheds. The footing and a floor slab are poured at the same time.

PREP WORK PRIOR TO CONCRETE POUR

1. The fill depth shall be at least 4" deep, but shall not exceed 24" for clean sand or gravel and 8" for earth. If the fill exceeds these limits, an engineer's design is required.
2. The fill shall be compacted to assure uniform support
3. The fill material must be free of vegetation and foreign material.

4. A 6-mil vapor retarder must be placed on top of the fill, if the area is to be heated.

DRAINAGE SYSTEM / WATERPROOFING INSPECTION

This inspection is to be performed prior to backfilling the exterior side of the foundation wall.

WATERPROOFING

1. The exterior side of basement walls are required to have a coating of 3/8 inch Portland cement and a layer of a bituminous coating. Install a protective membrane over the coating, normally 6 mil plastic, to protect coating during backfill.
2. As an alternative, there are several approved, commercially available waterproofing systems available.

DRAINAGE WHEN THE INSIDE GRADE OF A CRAWL SPACE FOUNDATION IS LOWER THAN THE FINISHED OUTSIDE GRADE

1. Interior drains consist of draintile (usually 4" corrugated, perforated plastic pipe) installed below grade along the inside of the foundation wall. Typically crushed stone or gravel is placed below and above the draintile.

2. Exterior drains are installed on the top of the footing. Install 2" of crushed stone or gravel on top of the footing projection, then place the draintile and then an additional 6" of crushed stone or gravel on top of the draintile. Cover with a filter cloth.

3. Drains must be run by gravity to daylight.

VENEER INSPECTION

The veneer inspection is performed after the exterior sheathing is installed, all the flashing is complete and the doors and windows are all installed - but before the exterior wall covering is installed.

BRACED WALLS

1. Braced wall must be installed according to the approved plans, including the specifically spaced locations, nailing, and hold-downs (if required).
2. If continuous OSB is being utilized, the panels have to be nailed per the code and the corners overlapped.
3. If the portal frame method (APA) is being utilized, the hold-downs, straps, continuous header and nailing requirements must be complete.
4. Any non-structural sheathing must be nailed or stapled properly. Nail heads or staple crowns must not penetrate the sheathing surface

PRESSURE TREATED MATERIAL

1. Bands, rim joists and sill plates abutted by decks, porches, steps, stoops and landings must be pressure treated.

FLASHING

1. The top and sill of all window and door openings must be flashed. Jamb flashing, if required by the window or door manufacturer, must be installed.
2. Flashing is required where any exterior appurtenance is attached and where concrete or mortar abut a band or rim joist.
3. Note: Bright aluminum is not permitted for flashing; galvanized steel, coated aluminum or heavy vinyl are permitted to be used.

MASONRY CONSTRUCTION

1. Exposed, non-treated wood studs and bands located behind masonry or stone veneer shall be covered with asphalt saturated building paper (building felt) or approved house wrap.
2. Weep holes and flashing are required for brick veneer above and below window and door openings, and beneath the first course of masonry above the foundation wall.

FRAMING INSPECTION

All of the rough framing must be completed- but prior to installing insulation and drywall.

PRELIMINARY WORK MUST BE COMPLETED

1. All sub-trade rough-ins (plumbing, gas, mechanical and electrical) must be inspected and approved.
2. If there is a masonry fireplace, the throat must have been inspected and then the fireplace completed prior to the framing inspection.
3. The building must be dried in. The ice shield and roof shingles must be complete and all doors and windows set.

STRUCTURAL MEMBERS

1. All structural members, their sizes, spans and method of attachment are to be in accordance with the code and as shown on the approved plans.
2. Any framing member that has been cut or notched beyond allowances must be reinforced.

DOORS AND WINDOWS

1. Every dwelling must have at least one side hinged exit door with the minimum dimensions of 3’ wide by 6’-8” high.
2. Every sleeping room must have a window with the net clear opening of 5.7 square feet (5 square feet if the floor of the room in which the window is located is a grade level floor.). The window sill, as measured from the inside, shall be not more than 44” above the finished floor.
3. Glazing of windows and doors that are in hazardous locations must be safety glazing (tempered).
4. All wood sills that rest on concrete or masonry exterior walls and are less than 8 “ from exposed earth must be pressure treated.

FIREBLOCKING

1. Fire blocking shall be in place. (At soffits, stairs, penetrations between levels.)

STAIRS

1. Stairs must be installed. The maximum tread rise shall be 8-1/4". The minimum tread depth shall be 9". Open risers are permitted, provided the opening between treads does not permit the passage of a 4" diameter sphere.

ATTICS

1. All attic areas shall be ventilated. Any attic area of at least 30" in height must have an access opening of 22" x 30". A larger opening is required when equipment is located in the attic.

PRE-FAB FIREPLACES

1. Pre-fab fireplaces must be installed and will be inspected during the framing inspection. The manufacturer's installation instructions must be on site.
2. The fireplace and chimney/vent must be installed according to the manufacturers instructions and listing.
3. The unit shall be secured to the framing members to provide clearance to combustible materials not less than set forth in the listing.
4. The chimney/vent sections must be installed to provide proper clearance to combustibles and if the chimney/vent extends through a floor, ceiling or wall, a factory furnished fire stop and spacers must be installed.
5. The hearth extension shall be of noncombustible material. It must extend not less than 16" in front of and at least 8" beyond both sides of the fireplace.
6. The termination of chimney/vent and installation of the mantel must be accordance with the manufacturer's instructions.

MASONRY FIREPLACE INSPECTION

This inspection is performed after the smoke chamber has been constructed. The first flue liner may be set at the time of inspection.

FOOTINGS

1. The fireplace and its chimney must be constructed on footings of reinforced concrete at least 12 inches thick that extend at least 6 inches beyond each side and back of the fireplace.

FIREPLACE

1. The fireplace must be constructed of solid masonry; the sides and back walls of the firebox when lined with firebricks must not be less than 8" thick. An unlined firebox must be 10" thick of solid masonry.
2. Joints between fire brick must not exceed ¼ inch.
3. The rear wall of the smoke chamber must not be less than 6 inches thick and parged with mortar on all sides.
4. A 2" clearance from combustibles must be maintained.
5. The hearth extension shall be of noncombustible material. It must extend at least 16" in front and 8" on each side of a fireplace opening that is less than 6 square feet in size. If the fireplace opening is greater than 6 square feet, the hearth must extend a minimum of 20" in front and 12" on each side.
6. Woodwork, mantle or other combustible materials must not be placed within 6" of a fireplace opening; wood may project 1/ 8" for each 1" of distance from the opening within 12".

FIREPLACE THROAT

1. The fireplace throat must be a minimum of 8" above the above the lintel, or fireplace opening.

CHIMNEY

1. The chimney must terminate at least 2' higher than any portion of the building within 10', but it must not be less than 3' above the point where the chimney passes through the roof.

INSULATION INSPECTION

The framing inspection shall be approved prior to the insulation inspection. An exception is on additions and renovations when framing and insulation inspection can be done together. All exterior sidewalls and any non-accessible ceilings must be insulated and inspected before concealment.

MINIMUM R-VALUES OF INSULATION

- Sidewalls R-13

- Basement Wall R-8
- Flat Ceiling R-30
- Sloped Ceiling R-30
- Under-floor (conditioned crawl) na
- Under-floor (crawl) R-19
- Crawl Space Wall R-10
- Slab Perimeter R-5
- Under Cantilevered floors R-30

INSTALLATION

1. Insulation behind tubs and showers shall be installed before installing the unit(s).
2. Areas around doors and window frames shall be sealed; insulate around fireplace and chimney.
3. The space occupied by outside band boards between stories shall be insulated.
4. Ceiling insulation must not abut the underside of the roof sheathing (plywood). A one inch air space must be maintained in this location.
5. An approved vapor retarder must face the conditioned (warm-in-winter) side and be fastened or taped to each stud. Torn or missing vapor retarders must be repaired or replaced.
6. Insulation behind pre-fab fireplaces must have an approved fire-retardant vapor retarder. (i.e.; a flame spread rating not to exceed 25 and a smoke developed rating not to exceed 450)
7. Batt type insulation must be marked with its R-value. The depth of blown-in attic insulation must be indicated by depth markers, provided for every 300 square feet of area.

FINAL INSPECTION

This is the last inspection. All of the trades have had their final inspections approved. All finished space shall be shown on the County approved plans.

HANDRAILS AND GUARDRAILS

1. Handrails are required for stairways having four or more risers, and the height of the handrails shall be 34” to 38” measured vertically from the nosing of the stair tread. See *How to Build a Deck* to see the acceptable handrail profiles.
2. Guardrails are required for open sides of stairways and around porches, balconies or raised floors surfaces when the distance to the ground or to another floor is more than 30”. Intermediate rails or ornamental rails of a guardrail must be constructed so they do not allow a 4” sphere to pass between them, except that required guardrails for stairs shall not allow passage of a 4-3/8” sphere. Required guardrails for balconies or raised floors must not be less than 36” in height. A guardrail, when being used as a handrail, for an open side of a stairway must not be less than 34” nor

more than 38’ in height measured vertically from the leading edge of the tread.

STAIRWAY

1. A stairway shall not be less than 36” in clear width at all points above the handrail. The headroom in all parts of the stairway must not be less than 6’-8” measured vertically from the plane of the tread nosing. The steps must have a minimum tread depth of 9” (from nosing to nosing) and a maximum rise height of 8-1/4”; variations of tread depth or rise height within the flight of stairs shall not vary more than 3/8”. Open risers are permitted, provided the opening between treads does not permit the passage of a 4” diameter sphere.

GARAGE

1. Garage ceilings below habitable space must be protected by 5/8” type X, gypsum board applied to the underside of the garage ceiling joists.
2. The garage must be separated from the house with ½” gyp walls extending to the garage ceiling, or the full height of the house if the ceiling is not protected.
3. The supporting elements of a floor-ceiling assembly supporting habitable space above a garage shall be protected by minimum ½” gypsum board.
4. Doors opening from the garage to a sleeping room are not allowed.
5. Openings between the garage and house must be equipped with either a solid wood door of not less than 1-3/8” in thickness or 20 minute fire-rated doors.
6. The garage floor surface must be of noncombustible material, and shall slope toward the vehicle door opening.

SMOKE DETECTORS

1. A smoke detector is required in each bedroom, plus outside each sleeping area in the immediate vicinity of the bedroom and on each floor of the house including the basement but not the crawl space or uninhabitable attic.
2. All smoke detectors shall be interconnected. The power for the smoke detectors must be from the house wiring and battery back up.

CRAWL SPACES

1. Crawl spaces must be free of wood and debris.
2. All floor insulation must be installed with its vapor retarder turned toward the conditioned side.
3. Any penetrations in the foundation wall must be sealed.

ATTIC

1. The attic must be properly cross-ventilated to allow free air movement. Insulation must be properly installed. Any attic with flooring and having a permanent stairway must have handrails and guardrails at the stairway.

BATHROOMS

1. Bathroom exhaust fans must be vented to the outside through the soffit or side wall and must be terminated at an approved vent terminal.

INTERIOR

1. Interior finish material must meet flame spread requirements of the code. The vapor retarder on batt insulation left exposed in unfinished areas must have a maximum flame spread rating of 25. Foam plastic materials must not be exposed to the interior, attic or crawl space.

EXTERIOR

1. Wood siding, sheathing and wall framing on the exterior of a building must be a minimum of 6” from the ground surface. Any structural untreated post or column must be supported by a metal stand off.
2. All decks, stoops, and porches attached to a house must be bolted to a pressure treated band board with minimum ½” bolts placed in a staggered pattern, at 12” on center.

ROOF

1. Roof drainage, such as gutters and down spouts, is required in areas with other than low shrink swell potential. Down spouts are required to extend a minimum of 5’ from the house.

YARDS

1. Yards must be graded to have surface water to drain away from the house, a minimum of 6 inches fall in the first 10 feet. Where lot lines or other physical barriers prohibit 6 inches of fall within 10 feet, drains or swales must be provided to achieve adequate drainage.

RAMPS

1. All egress ramps shall have a maximum slope of not more than one in eight. Handrails are required on one side of ramps exceeding a slope of one in twelve. A 3’ x 3’ landing must be provided at top and bottom of ramps, where doors open onto the ramp, and where the ramp changes direction.

FINAL POOL INSPECTION

Swimming pools shall not be used until all required inspections of the pool, its barrier (i.e. fence), and its associated electrical outlet have been approved.

The primary purpose of our pool inspection process is to assure that safety requirements have been met, including verifying that the electrical installation has been completed, inspected and approved, and that the swimming pool barrier requirements of the code have also been satisfied by a permanent pool barrier.

For all pools, hot tubs and spas, a final inspection is required after all of the work has been competed. The final pool inspection will include a verification that the required barrier (fence) is in place. If a contractor is installing the pool, the final inspection cannot be approved unless a barrier is in place. If the contractor who is installing the pool will not be providing the barrier, the owner will be responsible for the barrier.

When the swimming pool permit is separate from the barrier permit, the electrical permit will be associated with the barrier permit. In this case, the barrier may only receive an approved final inspection after the electrical permit has received an approved final inspection and the barrier is installed.

The barrier may be the permanent barrier or a temporary barrier. Any temporary barrier must meet the safety requirements for the permanent barrier. When a temporary barrier is installed, the inspector will note on the final pool inspection: *"Temporary barrier must remain in place until the permanent barrier is completed and approved. Permanent barrier must be installed within 30 days."*

Required inspections:

1. For the electrical permit – trench, swimming pool bonding, rough, and final electrical,
2. For the pool permit – footing (if applicable), and final pool,
3. For the barrier permit – final barrier

POOL

1. The pool should be constructed in accordance with the manufacturer's drawings and approved by the plan reviewers.
2. Pools and spas with circulation outlets shall be provided with entrapment protection.

BARRIER

The requirements for the barrier are addressed in *POOLS, HOT TUBS AND SPAS*. A few of the requirements are:

1. The top of the barrier (fence) shall be at least 48 inches above the finished ground level, measured from the outside.
2. All gates must be self-closing and self-latching and must close from the outside toward the pool.

3. If a wall of the house will serve as part of the barrier, (1) any door in that wall must be equipped with an alarm or (2) any door in that wall must be self closing and self latching with the release mechanism located at least 54 inches above the floor and the door must swing away from the pool area or (3) the pool has to be equipped with a power safety cover.

ELECTRICAL

1. At least one electrical receptacle located between 10-20 feet from the inside wall of the pool.
2. All metal parts of the pool must be bonded (grounded).

BARRIER INSPECTION (IF DONE SEPARATELY)

The barrier inspection is done after the pool has been completed and may be done at the same time as the pool inspection.

The requirements for the barrier are addressed in Pools, hot tubs and spas. A few of the requirements are:

1. The top of the barrier (fence) shall be at least 48 inches above the finished ground level, measured from the outside.
2. All gates must be self-closing and self-latching and must close from the outside toward the pool.
3. If a wall of the house will serve as part of the barrier, (1) any door in that wall must be equipped with an alarm or (2) any door in that wall must be self closing and self latching with the release mechanism located at least 54 inches above the floor and the door must swing away from the pool area or (3) the pool has to be equipped with a power safety cover.